

3.4.12

Educational Programs: All:Technology use

The institution's use of technology enhances student learning and is appropriate for meeting the objectives of its programs. Students have access to and training in the use of technology.

Judgment

Compliant Non-Compliant Not Applicable

Narrative

Note: Text for all linked documents below can be increased/decreased for ease of reading by pressing your keyboard's Ctrl key while rotating the mouse wheel.

Angelo State University is committed to being a technologically advanced institution that uses appropriate technology to enhance student learning. The mission of the Information Technology (IT) team at ASU is to create an environment that integrates technology into the fabric of the institution to create value and operational efficiencies for departments and empower students, faculty, and staff, with the information, tools, and services they need, when and where they need them. This mission is part of a comprehensive Information Technology Strategic Plan that supports the strategic mission and goals set by ASU, the Texas Tech University System, and the Texas Department of Information Resources.

TECHNOLOGY TO ENHANCE STUDENT LEARNING

ASU continuously strives to adopt appropriate technologies to enrich everyday operations and enhance student learning in traditional and distance education programs. Core educational technologies at ASU include the following:

- **RamPort**—Since 2005, ASU has used a campus technology portal called RamPort, which acts as the entry point for students, faculty, and staff to access ASU information resources and associated learning and communication tools. The portal, which can be accessed at any time and from any place, facilitates access for all students, including those enrolled in distance education programs. Users only need to log in once to access a wide range of information and services including, for example, library resources, curriculum reference materials in Blackboard, web-based email, and web-based calendars. Because the portal is integrated with the institution's information-management systems, it also allows students to manage their registration online and provides them with convenient access to up-to-date personal records, including, for example, grades, transcripts, billing information, and library reminders.

The portal offers similar advantages to faculty and staff users, including customized access to key institutional information and resources, web-based email, and web-based calendars. The portal also includes an application that allows faculty to send targeted announcements to specific groups of students. By providing around-the-clock access to current academic and administrative information, web-based email, web-based calendars, and targeted announcement delivery, the

portal enhances communication among all ASU students, faculty, and staff, whether on campus or at a distance. Evidence that students are actively using Ramport to engage the university, faculty, and staff is shown on the Information Technology website (IT Facts and Trends: RamPort Usage).

- **Blackboard Academic Suite**—The primary learning and communication tool used to enhance student learning at the course level is Blackboard Academic Suite (Blackboard), an online course management system that supplements traditional classroom instruction and serves as the primary instructional medium for Distance Learning. Blackboard has powerful capabilities in three key areas—instruction, communication, and assessment. Blackboard allows faculty to create powerful learning content using a variety of web-based tools; develop custom learning paths for individual students or groups; facilitate student participation, communication, and collaboration; and evaluate students' work using a rich set of assessment capabilities. Students use Blackboard to submit completed homework assignments online, participate in discussion forums, and collaborate using the chat and virtual lecture rooms. Use of Blackboard to enhance student learning has increased over the past several years at ASU, from 382 courses using Blackboard in the fall semester of 2006 to 722 courses in the fall of 2011 (IT Facts and Trends: Blackboard Usage).
- **Smart Classrooms**—On the ASU campus, 109 classrooms (approximately 85 percent of total classrooms) are "smart" classrooms, which are equipped with high-tech systems to facilitate content delivery to students. Each room has a podium, a built-in computer with Internet access, and a media player, all of which are connected to a ceiling-mounted projector. This arrangement facilitates the integration of technology into large-group instruction by allowing faculty to project educational content onto a large screen. Types of content generated for use in the smart classrooms range from simple PowerPoint presentations to interactive demonstrations of discipline-specific technologies, such as software packages and online research tools. The smart classrooms also allow students to present assignments at a professional level. For example, to prepare them for their future role in the classroom, students in the Teacher Preparation Program must develop lesson plans and teach mini-lessons to their class using technology in the smart classrooms. As faculty members identify new ways of using technology to enhance student learning, the smart classrooms continue to evolve.
- **Computer-Based Classrooms**—ASU has 23 computer-based classrooms that provide students with hands-on, in-class access to technology tools and resources, such as Microsoft Office and Adobe Suites software, discipline-specific software, and various online resources. These classrooms allow faculty to integrate student use of technology into their courses, thereby helping students develop competencies in the appropriate and effective use of available technologies.
- **Porter Henderson Library**—The Porter Henderson Library is actively engaged in enhancing the teaching and learning environment at ASU by providing online access to a variety of educational technology tools, services, and resources, including online databases, journals, and eBooks. For more information, please see Core Requirement 2.9, Learning resources and services.

APPROPRIATE TECHNOLOGY FOR MEETING PROGRAM OBJECTIVES

The IT team actively looks for opportunities to partner with academic and service departments to provide instructional technology services that enhance the teaching and learning environment (Information Technology Strategic Plan, Objective 5). The IT team also solicits student feedback on ASU technology services annually and uses the survey results to identify appropriate improvements and new service offerings. Survey data are summarized and published on the IT website (IT Facts and Trends: Overview). In addition to these IT-directed efforts, individual departments develop and maintain discipline-specific technologies, many of which are supported in part by external funding sources, such as grants. As a result of these collective efforts, academic units across the campus have specialized high-tech equipment and/or educational technologies designed to meet program-specific objectives, as summarized below.

College of Arts and Sciences

Several departments in the College of Arts and Sciences use discipline-specific technology tools to meet program objectives, as illustrated by the following examples:

- **Agriculture**—More than half of the courses offered through the ASU Agriculture Department include hands-on laboratory-based instruction conducted at the Management, Instruction and Research (MIR) Center, a facility that sits on 6,000 acres of range and farmland. The center includes everything from a feed mill and traditional laboratories to a food product development lab and multimedia classroom.
- **Art and Music**—Art and music students use facilities specifically dedicated to their area of concentration. For example, specialized studios for graphic design and sculpture are provided on campus in the Carr Education-Fine Arts Building, while ceramic students use the state-of-the-art ceramic studio at the San Angelo Museum of Fine Arts. Most classes are held in smart classrooms with projectors, computer connections, and Internet access.
- **Biology**—The Biology Department maintains the Angelo State Natural History Collections, which contain tens of thousands of specimens of all types of living organisms. The collections are a resource for many fields of biological research, and data for specimens are maintained in searchable databases using Specify, a software system designed for managing natural history collections.
- **Chemistry and Biochemistry**—In the Department of Chemistry and Biochemistry, students get hands-on learning with advanced technology as well as access to SciFinder, a chemical article-searching service that supplements research. Students learn how to use SciFinder when they take CHEM 4181: Seminar in Chemistry. A list of some of the department's scientific equipment is available on the department's website (Chemistry Facilities and Equipment).
- **Communication, Mass Media, and Theatre**—The Department of Communication, Mass Media, and Theatre features a computer lab, digital television facilities, an Internet radio station, and a comprehensive photography lab with digital capabilities. The mass media program also operates the Ram Page, the award-winning weekly campus newspaper, which is completely written and produced by students. Ram TV is the department's television studio, where students produce,

shoot, edit, and air episodes of the weekly program “Access ASU.” Ram Radio is the department’s radio station that is broadcast over the Internet. In the theatre program, students use Vectorworks, a computer-aided design software program, to design sets and lighting.

- **English and Modern Languages**—The Department of English and Modern Languages is home to the ASU Usability Testing Lab, which has powerful technologies—such as eye tracking, remote viewing, data collection/analysis, and video technologies—to observe and measure the way people interact with information for the sake of making productive changes. Students in ENG 4365: Usability Testing in Technical and Business Writing work in the lab and conduct usability tests for ASU and local clients.
- **History and Political Science**—In the Department of History and Political Science, students use technology to support primary-source research, writing, and presentation projects. For example, in History 4314: Historical Preservation, Research and Writing, students use technology in a variety of ways, such as scanning historic photographs from the West Texas Collection using PastPerfect, a popular software for managing museum collections; creating presentations based on assigned research topics using PowerPoint and Prezi, a cloud-based presentation software that uses a “zoomable canvas” to facilitate the exploration of ideas and the connections among them; and creating mock-ups of museum spaces using Google’s Sketch Up Software.
- **Mathematics and Computer Science**—The ASU computer science program maintains the Entertainment Computing Laboratory to promote education and research into software design and development for computer games. The lab is open to computer science majors interested in learning more about the interactive entertainment industry, and equipment in the lab includes 12 Dell XPS workstations equipped with 3-D graphics and authoring and development software.
- **Physics**—The ASU Planetarium in the Department of Physics recently underwent a major renovation funded by a \$2.4 million grant from the US Department of Defense. The renovation replaced the planetarium’s original equipment, which was installed in 1985, with a new SciDome HD digital projection system powered by Starry Night software and a digital sound system with Dolby 5.1 surround sound. The Sci-Dome HD projector is capable of projecting more than 500 million stars and celestial objects and, unlike the previous system that could only show the sky from a fixed point on the Earth’s surface, the new system allows users to view the universe and the Earth from any vantage point (*ASU Magazine*, Summer 2010, pages 4–5). Other technologies available to physics students engaged in undergraduate research projects include laser systems, precision electronics, vacuum systems, x-ray technology, and LabVIEW software, an industry standard for laboratory automation. These technologies facilitate research in several areas, ranging from computational plasma physics and medical imaging to solid state physics and observational astronomy.

College of Business

Students in the College of Business use a variety of educational technologies to meet program objectives. For example, most courses offered by the college require students to use Blackboard, Respondus

Lockdown Browser (for completing weekly quizzes), Microsoft Excel, and other software packages commonly used in business settings. Most courses also require students to use the Internet to identify and investigate valid sources of information. Discipline-specific technology tools and resources available through the colleges' four departments include the following:

- **Accounting, Economics and Finance (AEF)**—Student learning is greatly enhanced through the use of Internet search engines, professional browsers, and websites. Examples of technology used in classes include the following: www.adr.com and www.finance.yahoo to collect stock prices and RIA Checkpoint as a tax research database to complete tax projects (Technology Use to Aid Student Learning: Accounting, Economics, and Finance).
- **Management and Marketing**—Students learn to search professional databases such as Mergent, Hoovers, Forbes, and Business & Economics. The analysis of these online databases link classroom theory with real-world business (Technology Use to Aid Student Learning: Marketing and Management).
- **Security Studies and Criminal Justice**—The newly renovated planetarium described above also serves as an integral component of the university's new Center for Security Studies (CSS). When used as the "Global Immersion Center," the former planetarium facilitates educational programming in security and intelligence training by providing a full-dome, 360-degree immersive, interactive multimedia visualization and learning environment (*ASU Magazine*, Summer 2010, pages 4–5).

College of Education

In addition to using Blackboard and smart-classroom technology in most of its courses, the College of Education also uses TaskStream, an objective-based electronic portfolio system that allows students to submit artifacts in support of defined learning outcomes so that faculty can properly assess each student's development. The college also recently established the New Innovative Teaching Center, a classroom with state-of-the-art teaching and learning technology that allows students to develop competencies using the types of technologies available in today's schools. In the Department of Teacher Education, all courses are conducted in classrooms equipped with multimedia technology to familiarize students with the tools they will need to effectively teach and communicate with today's students. Faculty in the Department of Curriculum and Instruction also use technology in the smart classrooms to support their courses. For example, students in ED 2323: Introduction to Computer Technology use popular online technology tools, such as You Tube and Google Sites, to develop competencies in the use of technology and create educational resources for use in their own classrooms, such as videos to enhance instruction and student learning, content-area tutorials, blogs, PowerPoint presentations on computer and email usage and etiquette, templates for tracking grades, autobiographical videos, original graphics, and brochures.

College of Health and Human Services

- **Department of Kinesiology**—Student learning is enhanced in statistics classes by the use of SPSS (originally Statistics Program for the Social Sciences).

- **Department of Nursing and Rehabilitation Sciences**—All ASU nursing students have access to the High-Fidelity Simulation Laboratory, which is equipped with cutting-edge technology that allows students to practice their skills in a safe environment. The laboratory's high-fidelity simulators, or mannequins, are controlled by nursing instructors from a computer in an observation room adjacent to the students' work area. Instructors observe through a mirrored viewing window as students work on the simulators, doing everything from setting up IVs and taking urine samples to using defibrillators and performing tracheotomies. The mannequins have sacs in their chests that move up and down to mimic the rise and fall of a human chest while breathing, and they have tubing in their arms and legs that allow students to feel for a pulse (High-Fidelity Simulation Laboratory).

The department's physical therapy program also houses state-of-the-science facilities, including six skills laboratories available for manual therapy, orthopedic and wound care instruction, electrotherapy, gait analysis, and neuroscience. Four dedicated research labs—a fine-motor motion-analysis lab, a gross-motor motion-analysis lab, a human-performance lab, and a motor-control lab—are designed to support student learning as well as faculty and student research. Two multi-purpose classrooms and a human anatomy lab have also been dedicated to the physical therapy program.

College of Graduate Studies

Students enrolled in ASU graduate programs have access to the university-wide educational technologies and the discipline-specific technologies relevant to their area of study, as described above.

ACCESS TO TECHNOLOGY

ASU is committed to providing reliable access to technology and electronic resources needed to enhance the teaching and learning environment. Web access to technology services via RamPort provides students, faculty, and staff with around-the-clock access to key institutional information and resources, including library resources, web-based e-mail, web-based calendars, and course information in Blackboard. Because RamPort is integrated with the university's information management systems, students also can register for classes, check grades, and pay tuition online. Blackboard, the online learning management system, enables students to submit assignments, take tests, check grades, and interact with classmates and faculty members anytime, anywhere. Blackboard provides similar advantages to faculty users, who can manage course content, post announcements, communicate with students, and post grades online. The campus-wide mobile-friendly wireless network allows students, faculty, and staff to connect with their laptop, tablet, or smartphone to check e-mail, calendars, and campus news. Students can tour the campus, meet the ASU president, review the university calendar and current course offerings, submit applications, read RAM Page (the school newspaper), browse the library's holdings, and access full-text documents and articles from any location in the world using ASU's web services.

ASU uses a state-of-the-art network infrastructure to provide electronic access to information and to enhance the learning environment for the ASU community. Remote users connect securely to the ASU network using virtual private network (VPN) software. For on-campus residents, all of the on-campus

residence halls have high-speed connections to the ASU network in each resident's room. Wireless connectivity is also available in all buildings on campus, including residence halls.

As part of the university's commitment to incorporating technology into the classroom, more than 600 computers are located in computer labs and classrooms around campus, and 85 percent of the university's classrooms are equipped with multimedia equipment. General computer access and printing services for students are focused in two areas on campus—the computer lab in the Math Computer Science (MCS) building and the Library Learning Commons located on the first floor of the library. The MCS computer lab offers the traditional computer lab environment. Students have full use of computers with a variety of software applications, black and white printers, and a color printer. The MCS computer lab is open daily, and hours of operation are posted on the IT website (MCS Computer Lab schedule). The Library Learning Commons, introduced in the spring of 2011, provides 24-hour access to a technology-rich and mobile-friendly environment that includes large flat-panel displays to which students can connect laptops and other devices; digital senders to scan and send documents to students' e-mail accounts; laptop computers for checkout; enhanced wireless connectivity; and traditional personal computers and scanners. Electrical outlets are conveniently located throughout the Library Learning Commons for students to use and recharge digital devices. The option to checkout laptops for use in the library has proven to be very popular among students, with an average of more than 500 laptop checkouts per week.

To facilitate access to ASU's educational technology tools for distance education students, ASU publishes a Distance Education web page that provides basic information about Blackboard and the associated computer requirements for online coursework. In addition, the library publishes a list of Library Resources for Distance Education Students on its website, which provides information about how to access resources via RamPort, Blackboard, e-reserves, and interlibrary loan.

TRAINING IN TECHNOLOGY USE

The IT team provides training to students, faculty, and staff in the use of technology through several services (IT Support Services home page), including the following:

- **Technology Service Center**—The Technology Service Center or “Help Desk” provides frontline technology support for ASU students, faculty, and staff. The trained Help Desk consultants address common technical problems via phone, e-mail, online requests, and walk-in computer support. The Help Desk is located in the main computer lab in the Math Computer Science Building and offers direct support to students during office hours. More importantly, 24-hour support is available through the “Help” hotline.
- **Center for Innovation in Teaching and Research (CITR)**—The ASU Center for Innovation in Teaching and Research (CITR) provides technology training related to Blackboard and online course delivery, course capture technology, online office-hour technology, better web browsing for teaching and research, image editing, video editing and production, and other individual consultations related to grading with technology, clicker use in the classroom, and SmartBoard use for ASU faculty. In academic year 2009–2010, CITR hosted 13 workshops with an average attendance of 10 faculty members, held a summer institute with 15 faculty participants, and offered 120 unique consultations. In the first half of academic year 2010–2011, CITR hosted 8

sessions averaging 10 faculty members per session and offered approximately 140 faculty consultations. Consultations with the CITER Director increased from the previous year. CITER also served 20 faculty members at New Faculty Orientations and prepared 20 faculty mentors to do in-house training. Overall, approximately 260 faculty, including tenured faculty, tenure-track faculty, instructors, and lecturers, were served in 2010–2011. Half of all CITER training sessions offered and 70 percent of CITER private consultations are technology-related, with a focus on training and information regarding online course delivery and efficient use of technology in the classroom. See, for example, the CITER Faculty Training Course List, Fall 2011.

To assess faculty satisfaction with CITER services, the center conducts an annual survey in which faculty are asked to rank the “Quality of technology services and training” on a 1–5 Likert-type scale, with one being the lowest, dissatisfied, and five the highest, highly satisfied. In 2010, 58% of faculty marked high or highest with 25% marking the number three. In 2011 62% of faculty marked high or highest, with 28% marking the number three.

- **Porter Henderson Library**—The Porter Henderson Library offers workshops on a variety of technology-related topics, including the use of online search engines and databases. The library also publishes online learning tutorials and guides on its website to help students improve their research and information literacy skills (Library Research Tools home page).
- **e-Learning Center**—The e-Learning Center supports the mission of ASU by providing technical support and training to enhance the effective use of Blackboard and other software tools. For example, students using Blackboard for the first time are automatically enrolled in an introductory course that includes an online readiness self-assessment to help prepare them for online learning. Experts in the e-Learning Center work directly with faculty and students enrolled in distance education classes to resolve Blackboard issues. In addition, as part of the Information Technology Office, the e-Learning Center works in collaboration with departments across campus to help university employees develop the skills necessary to meet the demands of higher education in the twenty-first century. The e-Learning Center provides on-campus training courses (Technology Training Calendar, October 2011) and online learning resources and tutorials (Software Applications web page).
- **Technical Assistance in Computer Labs**— The MCS computer lab and the Library Commons are both staffed with trained technicians to answer technology-related questions for on-site users.

ASSESSMENT OF TECHNOLOGY USE

The IT team works in collaboration with academic and administrative units to evaluate the use of technology for the purpose of identifying and providing technology resources and services that enhance the teaching and learning environment at ASU.

Information Technology Strategic Planning and Evaluation Process

At ASU, the use of information technology is routinely evaluated at the institutional level as part of an ongoing strategic planning process. As summarized in the Executive Summary of the IT Strategic Plan, the

plan itself is part of an overarching planning process that ensures a shared vision for IT that is consistent with the university's vision, mission, and goals. To gain insight into customer needs, the IT team conducts an annual technology services survey that measures customer satisfaction and targets desirable new technology services. Survey feedback is incorporated into the annual budget request process and the Institutional Effectiveness program. The IT planning process has two key components—strategic and tactical/operational. The strategic aspect of the process is to develop a vision for technology at ASU by continuously evaluating feedback from students, faculty, and staff to identify new services and improve existing services. This process also includes comparing ASU to peer institutions, both in Texas and nationally; aligning with industry trends; and ensuring ongoing alignment with system-level, state-level, and ASU priorities and goals. The tactical/operational aspect of the planning process ensures that technology initiatives are planned, selected, and managed at an institutional level and are sustainable in terms of financial, personnel, and process resources to ensure ongoing delivery of services. To ensure an effective process for determining and prioritizing user technology needs, the IT team has established a Project Office that focuses on the planning and delivery of new technology initiatives. This office works under the guidance of the Technology Steering Committee, which provides the prioritization, direction, and resources for technology initiatives on campus.

Assessment of Student Competencies in the Use of Technology

The academic colleges and departments at ASU maintain primary responsibility for ensuring that technology use in the classroom enhances student learning and is appropriate and effective in meeting curricular objectives. Each school conducts ongoing curricular planning and assessment, as detailed in Comprehensive Standard 3.4.10, Responsibility for curriculum, and Comprehensive Standard 3.4.11, Academic program coordination, which includes assessment of educational technology tools in relationship to student learning. As new or different technologies are integrated into the teaching environment, faculty and IT staff monitor the effect on student learning using a variety of methods, including course evaluations and student performance data.

Individual colleges also survey students to solicit input about their perceptions regarding the use and effectiveness of new educational technologies. Any negative effects on student learning, whether identified in the formative, active, or summative stages of technology implementation, are addressed to ensure the greatest opportunity for student success. For example, the Department of Nursing and Rehabilitation Sciences has added five questions about online learning to its annual student survey regarding teaching effectiveness. The questions are designed to assess student competencies in the use of technology. One unexpected result was found through analysis of the responses that lead to a dramatic change. Students indicated that the delivery platform for the courses could have been better designed—that is, the Blackboard course platform was not sufficiently user friendly. The college hired a full time Instructional Designer to address this issue. The Department of Nursing and Rehabilitation Sciences also queries its faculty each year via online surveys to determine their satisfaction with a variety of teaching and learning resources, including IT support services relating to Blackboard, multimedia classrooms, and other educational technology tools, such as the High-Fidelity Simulation Laboratory.